

1 1. A method of detecting network failures in a Voice
2 over IP (VoIP) network comprising:
3 producing failure rate information from VoIP call
4 usage records associated with VoIP call traffic.

1 2. The method of claim 1, wherein producing comprises:
2 examining the VOIP call usage records at given time
3 intervals; and
4 producing the failure rate information for each of
5 the given time intervals.

1 3. The method of claim 2', further comprising:
2 determining, for each time interval, if the failure
3 rate information exceeds a defined threshold; and
4 generating an alarm if it is determined that the
5 failure rate information exceeds the defined threshold.

1 4. The method of claim 2', wherein producing comprises:
2 extracting information from the VOIP call usage
3 records;
4 generating from the extracted information a list
5 identifying disconnect cause codes for each network element
6 for which such information is collected and associating with
7 each of the disconnect cause codes a count corresponding to a
8 number of occurrences in the VOIP call usage records; and
9 determining, for each network element, a total count
10 corresponding to a total number of the disconnect cause codes
11 and a failure count corresponding to a number of failure type
12 disconnect cause codes included among the identified

13 disconnect cause codes.

1 5. The method of claim 3, wherein the network element
2 is a VOIP gateway.

1 6. The method of claim 3, wherein the disconnect cause
2 codes are ISDN disconnect cause codes.

1 7. The method of claim 3, wherein the failure rate
2 information is produced for each network element.

1 8. The method of claim 7, where the failure rate
2 information comprises a failure rate based on the determined
3 failure count and total count.

1 9. The method of claim 8, wherein the failure rate is
2 specified as a percentage of disconnect cause codes
3 represented by the failure type disconnect cause codes.

1 10. The method of claim 8, wherein the failure rate
2 information further comprises the failure count.

1 11. The method of claim 10, wherein determining if the
2 failure rate information exceeds a defined threshold comprises
3 determining if the failure rate exceeds a predetermined
4 failure rate threshold and the failure count exceeds a
5 predetermined failure count threshold and wherein generating
6 an alarm comprises generating an alarm if both of the
7 thresholds are exceeded.

1 12. The method of claim 3, wherein generating comprises:
2 reporting the failure rate information
3 electronically.

1 13. A method of detecting network failures in a Voice
2 over IP (VoIP) network comprising:
3 producing a failure rate from VOIP call usage
4 records associated with VOIP call traffic for a given time
5 interval;
6 determining if the failure rate exceeds a defined
7 threshold; and
8 generating an alarm if it is determined that the
9 failure rate exceeds the defined threshold.

1 14. A method of identifying network failures in a Voice
2 over IP (VoIP) network comprising:
3 generating alarms from VoIP call usage records.

1 15. A computer program product residing on a computer
2 readable medium for identifying network failures in a Voice
3 over IP (VoIP) network, comprising instructions for causing a
4 computer to:
5 produce failure rate information from VoIP call
6 usage records associated with VOIP call traffic;
7 determine if the failure rate information exceeds a
8 defined threshold; and
9 generate an alarm if it is determined that the
10 failure rate information exceeds the defined threshold.